

Claims

1. 1. A reinforcing bar coupler to couple first and second reinforcing bars to each other, each of the first and second reinforcing bars including a plurality of latitudinal ribs and longitudinal ribs, the reinforcing bar coupler comprising:

a sleeve having a shape of a cylinder which is axially opened at a surface thereof, the sleeve comprising:

a pair of first seating grooves axially provided in the sleeve to be arranged side by side, so that ends of the first and second reinforcing bars are seated in the first seating grooves to be arranged side by side, each of the first seating grooves having a semicircular cross-section and a depth corresponding to about a half of a diameter of each of the first and second reinforcing bars, with a plurality of first rib seats being provided on predetermined portions of each of the first seating grooves to allow the latitudinal ribs of each of the first and second reinforcing bars to be seated therein;

a cover unit to cover the first and second reinforcing bars seated in the first seating grooves of the sleeve, the cover unit having at a predetermined surface thereof a pair of second seating grooves which are arranged side by side to correspond to the first seating grooves, with a plurality of second rib seats being provided on predetermined portions of each of the second seating

grooves to allow the latitudinal ribs of each of the first and second reinforcing bars to be seated therein; and
a wedge axially fitted into the sleeve from an end of the sleeve to wedge the cover unit and the first and second 5 reinforcing bars in the sleeve.

2. The reinforcing bar coupler according to claim 1, wherein

the sleeve comprises first locking parts provided along opposite side edges of the opened surface of the 10 sleeve, with a first slant surface being formed along an inner surface of each of the first locking parts, and

the wedge comprises second locking parts provided along opposite sides of a predetermined surface of the wedge, with a second slant surface being formed along an 15 outer surface of each of the second locking parts, so that the first locking parts of the sleeve engage with the second locking parts of the wedge while the first slant surfaces of the sleeve are in contact with the second slant surfaces of the wedge.

20 3. The reinforcing bar coupler according to claim 1, wherein

the cover unit is longer than the sleeve by a half of an interval between the latitudinal ribs of each of the first and second reinforcing bars, the cover unit 25 comprising a first parallel surface at a side opposite to

the second seating grooves, with a first serrated surface being formed on a predetermined portion of the first parallel surface, and

5 the wedge comprises a second parallel surface at a position which is in contact with the first parallel surface of the cover unit, with a second serrated surface being formed on a predetermined portion of the second parallel surface, and at least one groove being formed along the second parallel surface in an axial direction.

10 4. The reinforcing bar coupler according to claim 1, wherein the first seating grooves of the sleeve further comprise first additional rib seats between the first rib seats, and the second seating grooves of the cover unit further comprise second additional rib seats between the 15 second rib seats.

5. The reinforcing bar coupler according to claim 1, wherein the sleeve comprises:

20 a plurality of latitudinal ribs and longitudinal ribs provided on an outer surface of the sleeve to have the same shapes as the latitudinal ribs and longitudinal ribs of the first and second reinforcing bars.

6. The reinforcing bar coupler according to claim 1, wherein the first and second reinforcing bars are coupled to each other by fitting only the wedge into the sleeve.

7. The reinforcing bar coupler according to claim 6,
wherein the wedge comprises:

a chamfered leading end;

5 a serrated surface provided on a parallel surface of
the wedge; and

a projecting part provided at a hammering end of a
middle section of the parallel surface of the wedge.

8. The reinforcing bar coupler according to claim 6,
wherein the first locking parts of the sleeve outwardly
10 extend from upper edges of sidewalls of the sleeve to be
perpendicular to the sidewalls, with the first slant
surface being formed along a lower surface of each of the
first locking parts, and

15 the second locking parts of the wedge extend outward
from opposite sides of the middle section of the wedge and
are bent downward, prior to being bent toward the serrated
surface to form a U-shaped cross-section, with the second
slant surface being formed along an upper surface of each
of the second locking parts.

20 9. The reinforcing bar coupler according to claim 1,
wherein each of the sleeve and the wedge is manufactured to
have a constant thickness by plastically deforming a steel
plate of a predetermined thickness using a pressing
machine.

10. The reinforcing bar coupler according to claim 9,
wherein an inner surface of each of first locking parts of
the sleeve has a width which is slightly smaller than a
width of each of second locking parts of the wedge, so that
5 the second locking parts of the wedge are securely locked
to the first locking parts of the sleeve.

11. The reinforcing bar coupler according to claim 9,
wherein a hammering end of a middle section of the wedge is
projected to a direction opposite to a parallel surface of
10 the wedge, thus forming a projecting part.

12. The reinforcing bar coupler according to claim 9,
wherein a middle section of the wedge comprises a groove
which is axially formed along an entire length of the
middle section.

15 13. The reinforcing bar coupler according to claim 1,
wherein the sleeve comprises one first seating groove on an
inner surface of the sleeve, and the cover unit comprises
one second seating groove to correspond to the first
seating groove of the sleeve, and the wedge comprise a pair
20 of wedges.

14. The reinforcing bar coupler according to claim 13,
wherein first slant surfaces of first locking parts of the

sleeve are formed to have a diameter which is increased in a direction from a central portion to opposite ends of the sleeve so that the pair of wedges are fitted into the sleeve from the opposite ends having the increased 5 diameter, and first and second depressions having a semicircular cross-section are provided in a central portion of the first seating grooves of the sleeve and a central portion of the second seating groove of the cover unit, respectively, with the first and second depressions 10 being deeper than the first and second rib seats.

15. The reinforcing bar coupler according to claim 13, wherein the cover unit is longer than the sleeve by about a half of an interval between the second rib seats, and comprises outside rib seats at opposite ends of the cover 15 unit, a first parallel surface of the cover unit being flat and a predetermined portion of a second parallel surface of each of the wedges which is in contact with the first parallel surface of the cover unit being flat.

20. The reinforcing bar coupler according to claim 13, wherein each of first slant surfaces of first locking parts of the sleeve has a constant slant angle from a first end to a second end of each of the first locking parts, and 25 the wedge comprises one wedge having a length which is almost equal to a length of the cover unit, with each of second slant surfaces of second locking parts of the wedge

having a constant slant angle from a first end to a second end of each of the second locking parts.

17. The reinforcing bar coupler according to claim 16, wherein each of the sleeve and the wedge is manufactured to 5 have a constant thickness by plastically deforming a steel plate of a predetermined thickness using a pressing machine.

18. The reinforcing bar coupler according to claim 17, wherein an inner surface of each of the first locking parts 10 of the sleeve has a width which is smaller than a width of each of the second locking parts of the wedge, so that the second locking parts of the wedge are securely locked to the first locking parts of the sleeve.

19. The reinforcing bar coupler according to claim 17, 15 wherein a hammering end of a middle section of the wedge is projected to a direction opposite to a second parallel surface of the wedge, thus forming a projecting part.

20. The reinforcing bar coupler according to claim 17, wherein a middle section of the wedge comprises a groove 20 which is axially formed along an entire length of the middle section.

21. The reinforcing bar coupler according to claim 13

or 16, wherein the wedge comprises a groove which is axially provided along a parallel surface of the wedge.

22. The reinforcing bar coupler according to any one of claims 1, 6, 9, 13, 16 and 17, wherein the wedge further
5 comprises a scale rule on an outer surface of the middle section of the wedge.